

DEPARTMENT OF TRANSPORTATION**Research and Special Programs
Administration****49 CFR Parts 172, 173, 175, 176, and
178****[Docket HM-139D; Amdt. Nos. 172-72, 173-
151, 175-21, 176-14, and 178-68]****Conversion of Individual Exemptions
to Regulations of General Applicability****AGENCY:** Materials Transportation
Bureau (MTB), Research and Special
Programs Administration, DOT.**ACTION:** Final rule.

SUMMARY: This action is being taken to incorporate into the Department's Hazardous Materials Regulations a number of changes based on the data and analyses supplied in selected exemption applications or from existing exemptions. The need for this action has been created by the public demand to make available new packagings and shipping alternatives that have proven themselves safe under the Department's exemptions program. The intended effect of these amendments is to provide wider access to the benefits of transportation innovations recognized and shown to be effective and safe.

EFFECTIVE DATE: These amendments are effective January 4, 1982. However, compliance with the regulations as amended herein is authorized immediately.

FOR FURTHER INFORMATION CONTACT: Darrell L. Raines, Chief, Exemptions and Regulations Termination Branch, Office of Hazardous Materials Regulation, Materials Transportation Bureau, Washington, D.C. 20590 (202-472-2726).

SUPPLEMENTARY INFORMATION: On June 4, 1981 the MTB published Notice No. 81-3 (46 FR 29973) under Docket HM-139D which proposed to amend the Hazardous Materials Regulations by incorporating the provisions of certain DOT exemptions and applications for exemptions into the general regulations. The public comment period ended July 20, 1981. A total of ten comments were received which referenced Docket HM-139D.

Two commenters requested that MTB consider including their exemption(s) into the next HM-139 rulemaking. One commenter requested that the mandatory compliance date for calcium silicon (powder) be at least six months after publication in the Federal Register. As a matter of information, holders of exemptions that are terminated by Docket HM-139 are given approximately six months to deplete their existing

stock before the exemption number has to be removed from the containers and shipping papers.

One comment received which was undated and unsigned recommended that MTB publish an amended notice so as to include such data as the number of units/carload commodities handled under each of the subject exemptions; the accident experience, if any, under each of the subject exemptions; and the types and characteristics of commodities handled under each of the exemptions. Apparently, this commenter is not familiar with the rulemakings under Docket HM-139. Approximately 300 exemptions have been terminated under HM-139 since November 15, 1976. Any exemption that has a questionable shipping experience is not considered for rulemaking under this docket.

A couple of changes have been made regarding the use of Specification 56 and 57 tanks that were not fully addressed in the notice.

First, for transportation by water in the Specification 57 tanks, frangible devices are not authorized in §§ 173.119(b)(6), 173.128(a)(3), 173.132(a)(2), 173.245(a)(38), 173.256(b)(1), 173.263(a)(8), 173.276(a)(12), and 173.277(c). These changes are necessary in order to provide a package that will not leak during transportation by water. Second, the authorized use of the Specification 56 tank has been expanded to include flammable solids (including water reactive materials) and dry oxidizers. During the past several years commodities such as calcium carbide, sodium nitrate, sodium hydrosulfite, phosphorous pentasulfide, magnesium powder, ammonium perchlorate, and others, have been transported in Specification 56 tanks or nonspecification portable tanks equivalent to Specification 56 tanks under the terms of a DOT exemption without incident. In view of the above, § 173.154 has been revised accordingly.

Other than minor editorial changes, the only other change of any significance is the revision of § 176.340. Because of the change being made in § 173.119, it is necessary to amend § 176.340; otherwise, combustible liquids not having any other hazards would not be allowed in the same portable tanks as authorized for flammable liquids.

In consideration of the foregoing, 49 CFR Parts 172, 173, 175, 176, and 178 are amended as follows:

PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

1. In § 172.101, the Hazardous Materials Table is amended by adding Calcium silicon (powder) and Magnesium, granules, coated. The entry Magnesium metal (powdered, pellets, turnings, or ribbons) is revised to read as follows:

§ 172.101 Hazardous materials table.

(1) E/A/W	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class	(3A) Identification No.	(4) Label(s) required (if not excepted)	(5) Packaging		(6) Maximum net quantity in 1 package (pounds)	(7) Water shipments		
					(a) Exceptions	(b) Specific requirements		(a) Passenger carrying air-craft or railcar	(b) Cargo vessel	(c) Other requirements
	Calcium silicon (powder).....	Flammable solid...	UN1406.....	Flammable solid and Dangerous when wet.	173.153	173.178	Forbidden	25	1,2	4. Segregation same as for flammable solids labeled Dangerous when wet.
	Magnesium granules coated, particle size not less than 149 microns.	Flammable solid...	UN2950.....	Flammable solid and Dangerous when wet.	173.153	173.178	25	100	1,2	1,2 Segregation same as for flammable solids labeled Dangerous when wet.
	Magnesium metal (powder, pellets, turnings, or ribbon) or Magnesium aluminum powder.	Flammable solid...	UN1869.....	Flammable solid and Dangerous when wet.	173.153	173.220	25	100	1,2	1,2 Segregation same as for flammable solids labeled Dangerous when wet.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

2. In § 173.119, paragraph (b)(6) is added to read as follows:

§ 173.119 Flammable liquids not specifically provided for.

(b) * * *

(6) Specification 57 (§ 178.253 of this subchapter). Steel portable tank. Authorized for transportation by water when having a minimum design pressure of 9 psig and equipped in accordance with § 178.253-4, except that frangible devices are not authorized. Also, for water transportation, no pressure relief device may open at less than 5 psig.

Authorized for liquids with flash points above 20° F and a vapor pressure not over 16 psia at 100° F.

3. In § 173.128, paragraph (a)(3) is revised to read as follows:

§ 173.128 Paints and related materials (flammable liquids).

(a) * * *

(3) Specification 52¹ or 57 (§§ 178.251, 178.253 of this subchapter). Metal portable tank. Not authorized for transportation by water except as prescribed in § 173.119(b)(6) of this subchapter.

4. In § 173.131, paragraph (a)(2) is revised to read as follows:

§ 173.131 Road asphalt, or tar, liquid.

(a) * * *

(2) In cargo tanks that are at least equivalent in design and construction to Specification MC-306 (§§ 178.340, 178.341 of this subchapter) except for the requirements of §§ 178.340-10, 178.341-3, 178.341-4, and 178.341-5.

5. In § 173.132, paragraph (a)(2) is revised to read as follows:

§ 173.132 Cement liquid, n.o.s.; container cement; linoleum cement; pyroxylin cement; rubber cement; tile cement; wallboard cement; coating solution (flammable liquids).

(a) * * *

(2) Specification 52¹ or 57 (§§ 178.251, 178.253 of this subchapter). Metal portable tank. Not authorized for transportation by water except as prescribed in § 173.119(b)(6) of this subchapter.

6. In § 173.154, paragraph (a)(5) is added to read as follows:

§ 173.154 Flammable solids, organic peroxide solids and oxidizers not specifically provided for.

(a) * * *

(5) Specification 56 (§ 178.252 of this subchapter). Metal portable tank. Authorized only for flammable solids (including water reactive materials) and dry oxidizers.

7. In § 173.164, paragraph (a)(7) is added to read as follows:

§ 173.164 Chromic acid or chromic acid mixture, dry.

(a) * * *

(7) Specification 56 (§ 178.252 of this subchapter). Steel portable tank.

8. In § 173.178, the heading and the introductory text of paragraph (a) are revised to read as follows:

§ 173.178 Calcium carbide, calcium silicon powder, and magnesium granules, coated.

(a) Calcium carbide, calcium silicon powder, and magnesium granules, coated must be packed as follows:

9. In § 173.182 the last sentence of paragraph (b)(6)(ii) is revised to read as follows:

§ 173.182 Nitrates.

(b) * * *

(6) * * *

(i) * * *

(ii) * * * Authorized only for ammonium nitrate (no organic coating), ammonium nitrate fertilizer, and potassium nitrate; or

10. In § 173.220, the heading and the introductory texts of paragraphs (b) and (b)(2) are revised to read as follows:

§ 173.220 Magnesium or zirconium scrap consisting of borings, clippings, shavings, sheets, turnings, or scalings, and magnesium metallic (other than scrap), powder, pellets, turnings, or ribbon; magnesium aluminum powder.

(b) Magnesium metallic (other than scrap), powder, pellets, turnings or ribbon, magnesium aluminum powder, must be packed in containers as prescribed in § 173.154.

(2) Specification 56 (§ 178.252 of this subchapter). Portable tank. Not authorized for transportation by water. For magnesium powder or magnesium aluminum powder, the following additional requirements must also be met:

11. In § 173.245, paragraph (a)(38) is added to read as follows:

§ 173.245 Corrosive liquids not specifically provided for.

(a) * * *

(38) Specification 57 (§ 178.253 of this subchapter). Steel portable tank. Authorized only for acetic acid, glacial; acetic acid solutions; compound, cleaning liquid; compound, lacquer, paint, or varnish removing, liquid; compound, rust preventing or compound, rust removing; *orthochlorophenol*; and phosphoric acid not exceeding 85 percent strength. For acid solutions, tanks constructed of a steel other than stainless steel must have a polyethylene liner impervious to the solution. Authorized for transportation by water when having a minimum design pressure of 9 psig and equipped in accordance with § 178.253-4, except that frangible devices are not authorized. Also, for water transportation, no pressure relief device may open at less than 5 psig.

12. In § 173.256, paragraph (b) is added to read as follows:

§ 173.256 Compounds, cleaning, liquid.

(b) Compounds, cleaning, liquid containing not more than 20 percent hydrofluoric acid, by weight, may also be shipped in specification containers as follows:

(1) Specification 57 (§ 178.253 of this subchapter). Steel portable tank. Authorized for transportation by water when having a minimum design pressure of 9 psig and equipped in accordance with § 178.253-4, except that frangible devices are not authorized. Also, for water transportation, no pressure relief device may open at less than 5 psig. Tanks must have a polyethylene liner impervious to the solution.

13. In § 173.263, paragraph (a)(8) is added to read as follows:

§ 173.263 Hydrochloric (muriatic) acid; hydrochloric (muriatic) acid mixtures; hydrochloric (muriatic) acid solution, inhibited; sodium chlorite solution (not exceeding 42 percent sodium chlorite); and cleaning compounds, liquids, containing hydrochloric (muriatic) acid.

(a) * * *

(8) Specification 57 (§ 178.253 of this subchapter). Steel portable tank. Authorized only for cleaning compounds, liquid, containing hydrochloric (muriatic) acid of not over 20 percent total acid by weight. Tank must have a polyethylene liner impervious to the solution. Authorized for transportation by water when having a minimum design pressure of 9 psig and equipped in accordance with § 178.253-4, except that frangible devices are not authorized. Also, for water transportation, no pressure relief device may open at less than 5 psig.

14. In § 173.276, paragraph (a)(12) is added to read as follows:

§ 173.276 Anhydrous hydrazine and hydrazine solution.

(a) * * *

(12) Specification 57 (§ 178.253 of this subchapter). Stainless steel portable tank. Authorized for hydrazine, aqueous solution only. Authorized for transportation by water when having a minimum design pressure of 9 psig and equipped in accordance with § 178.253-4, except that frangible devices are not authorized. Also, for water transportation, no pressure relief device may open at less than 5 psig.

15. In § 173.277, paragraph (c) is added to read as follows:

§ 173.277 Hypochlorite solutions.

(c) Specification 57 (§ 178.253 of this subchapter). Steel portable tank. Authorized for not over 15 percent solutions of sodium hypochlorite only. Authorized for transportation by water when having a minimum design pressure of 9 psig and equipped in accordance with § 178.253-4, except that frangible devices are not authorized. Also, for water transportation, no pressure relief device may open at less than 5 psig. Tanks constructed of a steel other than stainless steel must have a polyethylene liner impervious to the solution. Vented closures are authorized.

16. In § 173.301, paragraph (k) is amended by revising (k) introductory text as follows:

§ 173.301 General requirements for shipment of compressed gases in cylinders.¹

(k) *Outside packagings.* Specification 2P, 2Q, 3E, 3HT, 4BA spherical type, 4D, 4DA, 4DS, 9¹, 39, 40¹, and 41¹ must be shipped in strong outside packagings, except that the 4BA spherical type may

be securely mounted on pallets to provide protection for the spheres and any attachments.

17. In § 173.357, paragraph (b)(3) is revised to read as follows:

§ 173.357 Chloropicrin and chloropicrin mixtures containing no compressed gas or Poison A liquid.

(b) * * *

(3) Specification 17C or 17E (§§ 178.115, 178.116 of this subchapter). Metal drums (single-trip) with openings not over 2.3 inches in diameter. Capacity not to exceed 55 gallons for Spec. 17C nor 30 gallons for Spec. 17E. Authorized only for chloropicrin mixtures containing not over 15 percent chloropicrin by weight or 15 percent by volume chloropicrin, 85 percent by volume dichloropropene technical, and only authorized for such mixtures not classed as flammable under these regulations.

18. In § 173.365, paragraph (a)(11) is added to read as follows:

§ 173.365 Poison B solids not specifically provided for.

(a) * * *

(11) Specification 56 (§ 178.252 of this subchapter). Metal portable tank. Authorized only for *p*-nitrobenzyl bromide.

19. In § 173.375, paragraph (a)(3) is added to read as follows:

§ 173.375 Sodium azide.

(a) * * *

(3) Specification 56 (§ 178.252 of this subchapter). Stainless steel portable tank designed for top loading and unloading only. Tanks may be equipped with a bottom clean out plug. No part of the tank or fittings that come in contact with the sodium azide may contain any metal such as copper, lead, silver or mercury which can form explosive azide compounds. Each transport vehicle must be loaded by the consignor and unloaded by the consignee or by persons trained by the consignor. Not authorized for transportation by water.

20. In § 173.505, paragraph (b) is revised to read as follows:

§ 173.505 Exceptions for Other Regulated Material (ORM).

(b) Strong outside packagings as specified in § 173.1200 of this subchapter are not required for materials classed as ORM-D when unitized in cages, carts, or

similar overpacks and when shipped by a private or contract motor carrier from a distribution center to a retail outlet.

PART 175—CARRIAGE BY AIRCRAFT

21. In § 175.310, paragraph (c)(1) is revised to read as follows:

§ 175.310 Transportation of flammable liquid fuel in small, passenger-carrying aircraft.

(c) * * *

(1) In strong tight metal containers of not more than 5 gallons capacity, each packed inside a DOT Specification 12B fiberboard box or each packed inside a DOT Specification 15A, 15B, 15C, 16A, 19A or 19B wooden box, or in the case of a small aircraft in Alaska, each packed inside a wooden box of at least one-half inch thickness;

PART 176—CARRIAGE BY VESSEL

22. In § 176.340, the entire section is revised to read as follows:

§ 176.340 Combustible liquids in portable tanks.

(a) Combustible liquids may be transported by vessel in portable tanks only as specified below:

(1) Portable tanks authorized in § 173.119 of this subchapter.

(2) Portable tanks approved and maintained in accordance with 48 CFR 98.35, constructed prior to October 1, 1974. Such tanks may continue in service only until October 1, 1984.

(3) Portable tanks approved by the Commandant of the Coast Guard (C-MHM).

PART 178—SHIPPING CONTAINER SPECIFICATIONS

23. In § 178.51, §§ 178.51-2, 178.51-10 ((b) and (c) revised and (d) added), 178.51-12, 178.51-13 (heading and paragraph (a)) and 178.51-19 ((c) revised) are revised to read as follows:

§ 178.51-2 Type, size, and service pressure.

(a) *Type*. Cylinders may be spherical or cylindrical in shape. Closures made by the spinning process are not authorized.

(1) Spherical type cylinders must be made from two seamless hemispheres joined by the welding of one circumferential seam.

(2) Cylindrical type cylinders must be of circumferentially welded or brazed construction.

(b) *Size*. The capacity of the cylinder must be 1,000 pounds water capacity or less.

(c) *Service pressure*. The service

pressure must be at least 225 and not over 500 pounds per square inch gauge.

§ 178.51-10 is amended by revising (b) and (c) and adding (d) to read as follows:

§ 178.51-10 Wall thickness.

(a) * * *

(b) Cylinders that are cylindrical in shape must have the wall stress calculated by the formula:

$$S = [P(1.3D^2 + 0.4dt)] / (D^2 - d^2)$$

Where:

S = wall stress in pounds per square inch;

P = minimum test pressure prescribed for water jacket test;

D = outside diameter in inches;

d = inside diameter in inches.

(c) Cylinders that are spherical in shape must have the wall stress calculated by the formula:

$$S = PD/4tE$$

Where:

S = wall stress in pounds per square inch;

P = minimum test pressure prescribed for water jacket test;

D = outside diameter in inches;

t = minimum wall thickness in inches;

E = 0.85 (provides 85 percent weld efficiency factor which must be applied in the girth weld area and heat affected zones which zone shall extend a distance of 8 times wall thickness from center line of weld);

E = 1.0 (for all other areas).

(d) For cylinders with wall thickness less than 0.100 inch, the ratio of tangential length to outside diameter shall not exceed 4.0.

§ 178.51-12 is revised to read as follows:

§ 178.51-12 Openings in cylinders.

(a) Any opening must be placed on other than a cylindrical surface.

(b) Each opening in a spherical type cylinder must be provided with a fitting, boss, or pad of weldable steel securely attached to the container by fusion welding.

(c) Each opening in a cylindrical type cylinder must be provided with a fitting, boss, or pad, securely attached to container by brazing or by welding.

(d) If threads are used, they must comply with the following:

(1) Threads must be clean-cut, even, without checks and tapped to gauge.

(2) Taper threads to be of length not less than as specified for American Standard taper pipe threads.

(3) Straight threads, having at least 4 engaged threads, to have tight fit and calculated shear strength at least 10 times the test pressure of the cylinder; gaskets required, adequate to prevent leakage.

§ 178.51-13 is revised to read as follows:

§ 178.51-13 Pressure relief devices and protection for valves, safety devices, and other connections, if applied.

(a) Must be as required by the Department of Transportation's regulations that apply (see §§ 173.34(d), 173.124(a), 173.301(g), and 173.301(k) of this subchapter).

§ 178.51-19 is amended by revising (c) to read as follows:

§ 178.51-19 Marking.

(c) Location of markings. Markings may be stamped plainly and permanently in the following locations on the cylinder:

(1) On shoulders and top heads not less than 0.087 inch thick.

(2) On side wall adjacent to top head for side walls not less than 0.090 inch thick.

(3) On a cylindrical portion of the shell which extends beyond the recessed bottom of the cylinder constituting an integral and non-pressure part of the cylinder.

(4) On a plate attached to the top of the cylinder or permanent part thereof; sufficient space must be left on the plate to provide for stamping at least six retest dates; the plate must be at least $\frac{1}{16}$ inch thick and must be attached by welding, or by brazing at a temperature

of at least 1100°F., throughout all edges of the plate.

24. In § 178.118, the introductory text of § 178.118-10(a) introductory text is revised to read as follows:

§ 178.118-10 Marking.

(a) Marking requirements for new or altered drums are as follows: *New drums.* Marking on each drum by embossing on the permanent head, with raised marks, or by embossing or die stamping on footring, (if equipped), or on metal plates securely attached to drum by brazing or welding not less than 20 percent of the perimeter. *Altered drums.* Drums which have been altered to Specification 17H from an all 18-gauge tight head drum may be embossed on the body of the drum, no more than six inches from top curl.

(49 U.S.C. 1803, 1804, 1806; 49 CFR 1.53, App. A to Part 1).

Note.--The Materials Transportation Bureau has determined that this document will not result in a "major rule" under the terms of E.O. 12291 and is not a significant regulation under DOT's regulatory policy and procedures (44 FR 11034), nor require an environmental impact statement under the National Environmental Policy Act (49 U.S.C.

4321, et seq.) A regulatory evaluation and an environmental assessment are available for review in the docket. I certify that this final rule will not have a significant economic impact on a substantial number of small entities.

Issued in Washington, D.C. on November 25, 1981.

L. D. Santman,
Director, Materials Transportation Bureau.

(FR Doc. 81-34043 Filed 12-2-81; 8:45 am)

BILLING CODE 4910-80-M